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(71) Applicant (*for all designated States except US*): SAMSUNG ELECTRONICS CO. LTD. [KR/KR]; 416 Maetan-dong, Paldal-gu, Suwon-city, Kyungki-do 442-373 (KR).

(71) Applicant and
(72) Inventor: LEE, Kwang-Bok [KR/KR]; Mobile Communications Lab., Institute of New Media and Communications, Seoul National University, San 56-1 Sinlim-dong, Gwanak-gu, Seoul 151-742 (KR).

(72) Inventors; and
(75) Inventors/Applicants (*for US only*): KIM, Sung-Jin [KR/KR]; 439-1201, Cheongmyeong Maeul, Samsung Raemian Apt., 1046-1, Youngtong-dong, Paldal-gu, Suwon-city, Kyungki-do 442-813 (KR). KIM, Ki-Ho [KR/KR]; E-3102, Tower Palace, 467-17 Dogok 2-dong, Gangnam-gu, Seoul 135-535 (KR). PARK, Chang-Soon [KR/KR]; Mobile Communications Lab., Institute of New Media and Communications, Seoul National University, San 56-1 Sinlim-dong, Gwanak-gu, Seoul 151-742 (KR).

(74) Agent: LEE, Young-Pil; The Cheonghwa Building, 1571-18, Seocho-dong, Seocho-gu, Seoul 137-874 (KR).

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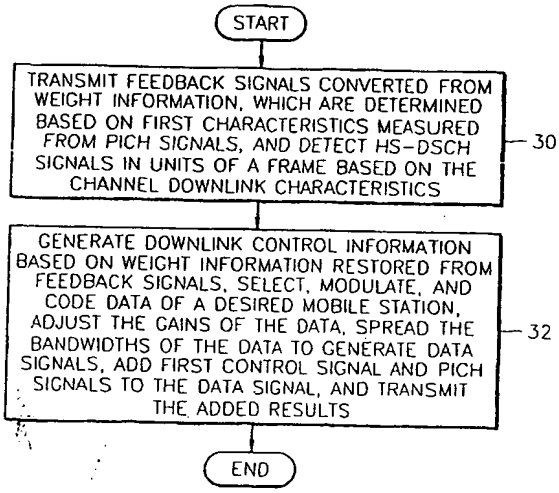
(54) Title: MOBILE COMMUNICATION APPARATUS AND METHOD INCLUDING BASE STATION AND MOBILE STATION HAVING MULTI-ANTENNA



(57) Abstract: A mobile communication apparatus including a base station and at least two mobile stations, having multiple antennas, respectively is provided. In the mobile communication apparatus, the base station restores from feedback signals transmitted from the mobile stations weight information determined in the mobile stations, generates from the restored weight information downlink control information ensuring maximum throughput to each of the mobile stations, and selects from among data of all of the mobile stations data of a desired mobile station(s) to be transmitted, based on the downlink control information. Each of each of the mobile stations has at least one mobile station antenna, the base station has at least two base station antennas, and the downlink control information includes mobile station selection information, an optimal basis matrix index, and optimal gain indices. As a result, nominal peak throughput in multi-antenna mobile communications can be efficiently achieved at low costs.

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